

**AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the application.

**LISTING OF CLAIMS**

- 1-3. (CANCELLED)
4. (PREVIOUSLY PRESENTED) A method of performing a plurality of chemical reactions simultaneously, said method comprising:
- a) providing a first sample into a first applicator, ;
  - b) providing a second sample into a second applicator, ;
  - e) applying electromagnetic radiation to the first sample in the first applicator from a first semiconductor based generator, the first semiconductor based generator being capable of generating electromagnetic radiation at a plurality of frequencies, ;
  - d) applying electromagnetic radiation to the second sample in the second applicator from a second semiconductor based generator, the second semiconductor based generator being capable of generating electromagnetic radiation at a plurality of frequencies, ; and
  - e) ~~individually~~ controlling the electromagnetic radiation applied to the first and second applicator by individually and independently controlling the first and second semiconductor based generators in response to control signals from the first and second applicators, in which the electromagnetic radiation is provided specifically and independently to each of the chemical reactions.
5. (ORIGINAL) A method according to claim 4, wherein the applied electromagnetic radiation is within the range of 300 MHz-300 GHz.

6. (original) A method according to claim 4, wherein the electromagnetic radiation applied to the first and second sample has essentially the same frequency and essentially the same power level so as to expose the first and second sample to essentially the same conditions.

7. (ORIGINAL) A method according to claim 4, wherein the first and second samples are PCR mixtures.

8. (ORIGINAL) A method according to claim 4, wherein the electromagnetic radiation is applied to the samples in cycles of at least two steps where the samples are cooled at least during a part of each cycle.

9. (PREVIOUSLY PRESENTED) A method according to claim 4, wherein the plurality of chemical reactions are conducted in an apparatus including at least one guide for guiding at least part of the electromagnetic radiation from the first semiconductor based generator to the first applicator, and a controller for individually controlling each of the first and second semiconductor based generators.

10-43. (CANCELLED)